2. FACILITY NETWORK OF STATEWIDE SIGNIFICANCE

Why a network of statewide significance? The IMS process is designed to analyze "big picture" intermodal transportation issues in the State of Indiana. As such, it focuses on the corridors and facilities that have the most impact on the State. The establishment of a known infrastructure, composed of intermodal facilities on the one hand, and of modal layers on the other, thus becomes a necessary and important early step for IMS development. This section of the report focuses on the facilities component of the IMS infrastructure. Access links to these facilities are further discussed in the next chapter, "IMS Development and User Interface".

2.1 Approach

The National Highway System (NHS) constituted the starting point for development of the State IMS network. By using this approach, the IMS team was able to leverage significant efforts already undertaken by INDOT for the Federal Highway Administration (FHWA). These efforts yielded a map showing the national highway system network, which was later converted to TransCad. A map of the digitized NHS is depicted in this chapter on all facility maps.

During 1995, INDOT worked with the FHWA to identify both passenger and freight facilities that qualified for NHS access, in order to define a network of NHS Major Intermodal Connectors. The basis to be used for selecting the facilities consisted of the FHWA criteria for facilities. Through a cooperative effort with the MPOs, INDOT identified ten major intermodal terminals needing connections to the NHS. A further seven facilities qualified under the criteria, yet did not require connections. In total therefore, 17 facilities were identified as meeting or exceeding the FHWA criteria. The 17 facilities correspond to 18 access links due to the fact that Indianapolis International Airport has two qualifying access links, one under the freight and one under the passenger criterion[1].

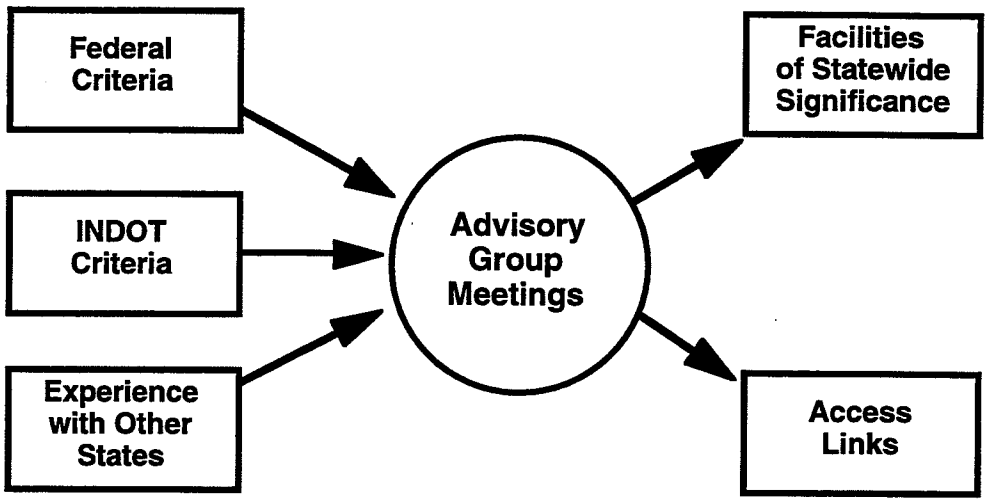
The overall progression of elements leading to the IMS network of statewide significance, can therefore be summarized by the following milestones:

- National Highway System
- Facilities of National Significance (using Federal-suggested criteria)
- NHS Major Intermodal Connectors

[1] *In addition to these links, a section of US 50 in Dearborn County was also submitted by INDOT as a qualifying link. This route serves facilities in Ohio and was placed in the NHS as a cooperative effort between INDOT, the Ohio DOT, and the OKI MPO.*

- Facilities of Statewide Significance (using State determined criteria)
- Access links to NHS, both local and State/US.

The facility network of statewide significance was developed in an iterative approach by the IMS team in conjunction with the Advisory Committee over the course of several meetings. Key factors in this approach included the study of federal criteria from the Federal Highway Administration, the examination of INDOT criteria and consultant IMS experience with other states. This general approach is summarized below:



2.2 Criteria For Inclusion

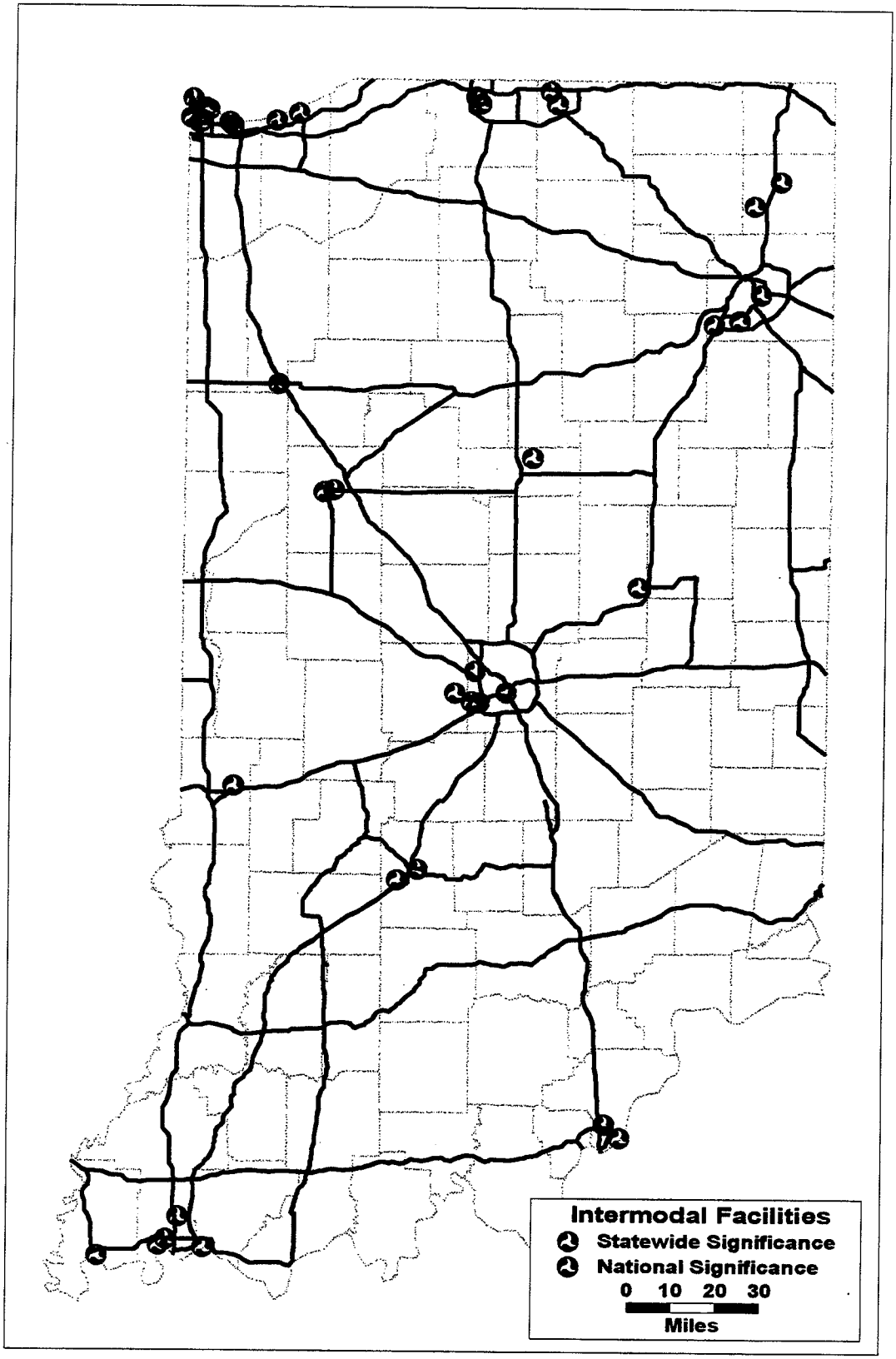
In several ways, this body of work constituted a useful starting point to develop parameters for the IMS network of statewide significance. Using the same national significance criteria employed by the FHWA as starting point, the IMS team worked with the Advisory Committee to develop a new set of criteria to capture a set of facilities more representative for the Statewide level. Evaluation of potential statewide criteria took place along with data collection efforts regarding demand at major types of facilities. To further aid with criteria evaluation, the IMS team also calculated the approximate number of facilities that would result depending which criterion was selected for each facility type.

Over the course of two advisory meetings, the passenger and freight subcommittees agreed to a final set of primary criteria, listed in the table below. In some cases, committee members felt that some facilities should be captured on the basis of their regional significance even if the demand figures (percentage of total or aggregate demand) did not satisfy the primary criteria. Such secondary criteria were eventually added to the list and did result in

identification of additional facilities (e.g., Kokomo Airport). As a result of using the statewide criteria in lieu of suggested Federal guidelines, the facilities network more than doubled, increasing from 17 to 41 facilities. The IMS maintained Indianapolis International Airport as having two access links, so that the IMS contains 42 access links to the 41 facilities. This increase in the facility count, as well as their general geographical distribution, is illustrated below in a facility table and by the exhibit on the following page entitled "Indiana Intermodal Facilities".

		FACILITY TYPE	NAME
National Significance	1	Airports (Pass./Frt)	Indianapolis International
	2	Airports (Passenger)	South Bend Michiana Regional
	3	Airports (Passenger)	Fort Wayne International
	4	Airports (Passenger)	Evansville Regional
	5	Intercity Bus	Tri-State Coach
	6	NICTD Station	Hammond
	7	NICTD Station	East Chicago
	8	NICTD Station	Gary Metro
	9	NICTD Station	Dune Park
	10	Rail/Truck Intermodal	Indianapolis Avon Yard
	11	Rail/Truck Intermodal	Fort Wayne Triple Crown
	12	Ports	Burns International Harbor
	13	Ports	Southwind Maritime Centre
	14	Ports	Clark Maritime Centre
	15	Ports	USX Steel
	16	Ports	Evansville Mulzer Stone
	17	Airports (Freight)	Hulman Regional Airport
Statewide Significance	18	Airports (Passenger)	Purdue University Lafayette
	19	Airports (Passenger)	Clark County
	20	Airports (Passenger)	Hulman Regional
	21	Airports (Passenger)	Eagle Creek Airpark
	22	Airports (Passenger)	Elkhart Municipal
	23	Airports (Passenger)	Monroe County
	24	Airports (Passenger)	Anderson Municipal
	25	Airports (Passenger)	Kokomo Municipal
	26	Amtrak Station	Indianapolis
	27	Amtrak Station	Hammond
	28	Amtrak Station	South Bend
	29	Amtrak Station	Elhart
	30	Amtrak Station	Waterloo
	31	Amtrak Station	Lafayette
	32	Amtrak Station	Garrett
	33	Intercity Bus Station	Union Station (Indianapolis)
	34	NICTD Station	South Bend
	35	Park N Ride	Indiana University - Bloomington
	36	Ports	Inland Steel
	37	Ports	LTV Steel
	38	Ports	Newburgh Mulzer Stone
	39	Rail/Truck Intermodal	Roanoke General Motors Facility
	40	Rail/Truck Intermodal	Evansville CSX
	41	Rail/Truck Intermodal	Hoosier Lift Remington

Indiana Intermodal Facilities



A summary of the Federal and State developed criteria to define the network of facilities of statewide significance is presented in the following table. The remainder of this chapter contains a more detailed description of the network by type of facility.

Facility Type	Federal Criteria	Primary Criteria Indiana IMS	Additional Criteria Indiana IMS
Intercity Train (Amtrak)	- 100,000 passenger/ year (entrainments and detrainments)	- 10 percent of State modal activity (Amtrak passenger demand)	- connection between major urban cities - regional coverage
Commuter Rail (NICTD)	- 5,000 daily passengers or park N ride lots of more than 500 spaces	- 10 percent of Indiana-share traffic, OR - 400 spaces per park-n-ride lot	- significant intermodal connectivity (e.g., bus to commuter rail)
Other/ Park-n-Ride Fac.	- 500 spaces	- 400 spaces per park-n-ride lot	- significant intermodal connectivity (e.g., bus service)
Intercity Bus	- 100,000 passenger/ year (boardings and deboardings)	- 10 percent intercity bus demand	- 10 percent combined intercity travel demand (i.e., intercity bus + intercity rail)
Airports (passenger)	- 250,000 annual commercial service enplanements	- 10 percent statewide demand, measured by passenger enplanements	- regional coverage
Ports	- 50,000 Twenty foot Equivalent Units (TEUs) / year, or - 100 trucks / day in each direction	- 50,000 TEUs per year activity, or - 100 trucks per day in each direction	
Airports (freight)	- 100,000 short tons / year arriving or departing by highway access, or - 100 trucks / day in each direction	- 100,000 short tons / year arriving or departing by highway access, or - 100 trucks per day in each direction	
Truck/Rail Intermodal	- 50,000 TEUs / year, or - 100 trucks / day in each direction	- 12,500 carloads / year (50,000 TEUs), or - 100 trucks / day in each direction	

2.3 Passenger Facilities Network

The types of passenger facilities selected for the IMS network include Amtrak rail stations; Northern Indiana Commuter Transportation District (NICTD) commuter rail stations; intercity bus stations; passenger airports; and an "other" category. Statewide facility maps are displayed after the passenger and freight descriptions; selected maps for individual facilities are at the end of this chapter.

2.3.1 Intercity Rail (Amtrak)

Seven Amtrak stations were selected for the IMS network:

- Indianapolis
- Hammond/Whiting
- South Bend
- Elkhart
- Waterloo
- Lafayette
- Garrett.

Amtrak demand has declined significantly over the last several years. Ten percent of modal activity in the State corresponds to 14,000 passengers per year (1995 demand numbers). Three stations (Indianapolis, Hammond, South Bend) exceeded this level of demand. The remaining four in the list were added because they satisfied the secondary criterion of regional coverage. Note that while Amtrak intercity rail service was interrupted for Garrett in September 1995, the IMS team maintained the station in the network based on an understanding that the service would soon resume, and because 1994 ridership at that location accounted for over ten percent of all Amtrak State service.

2.3.2 Commuter Rail (NICTD)

Five of the eleven Indiana NICTD commuter rail stations were selected for the IMS network, based on the following classification criteria:

Station	10% of Indiana traffic	400 Space Lot	Intermodal Connections
Hammond	✓	✓	✓
East Chicago	✓	✓	
Gary Metro	✓		
Dune Park		✓	
South Bend			✓

Ten percent of Indiana traffic equates to roughly 900 passengers per weekday, per station. The example of South Bend station underscores the importance of having established secondary criteria for facilities of statewide significance. While the station currently attracts a small percentage of overall Indiana traffic (2.01%) and is equipped with a relatively small lot (75 spaces), its physical connection to the South Bend Airport and the Michiana Transportation Center make it an important facility for the IMS.

2.3.3 Intercity Bus

Through its data collection efforts, the IMS team found reliable intercity bus demand information extremely difficult to gather. Ridership estimates were available, however, from the majority of intercity bus carriers. The picture that emerged from this process was one of a bus operation very centralized on Indianapolis (close to 85 percent). The IMS team estimated that ten percent of State and inter-State intercity demand equates to 20,000 passengers per year.

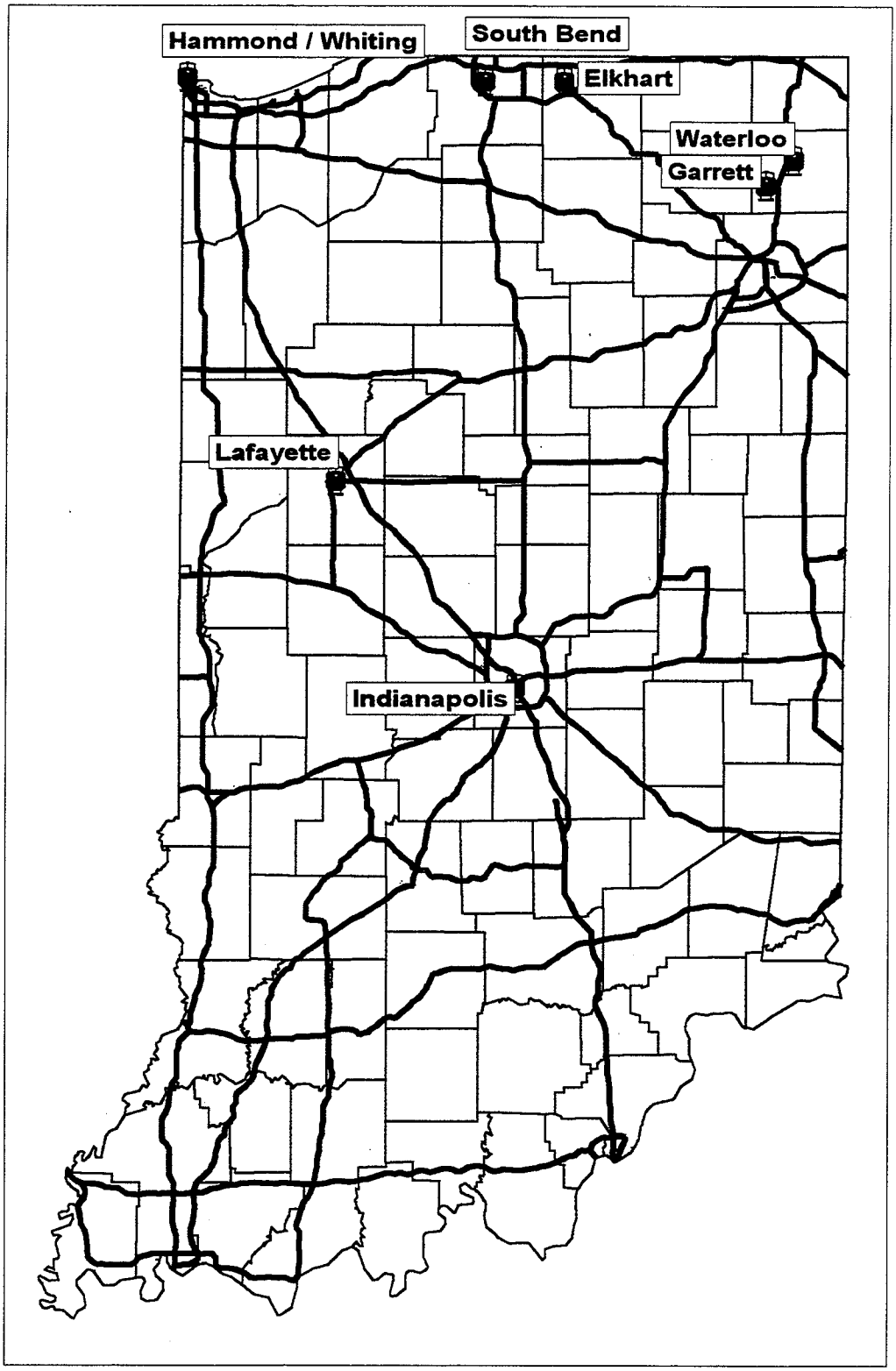
During the course of the study, Greyhound, Southeastern Trailways and Swallow bus lines relocated several city blocks to Union Station. In addition, also during the course of the study, American Trailways announced it was suspending its service through Indiana. The end result for the project consisted in selected Union Station in Indianapolis as the only IMS facility for this category.

2.3.4 Airports

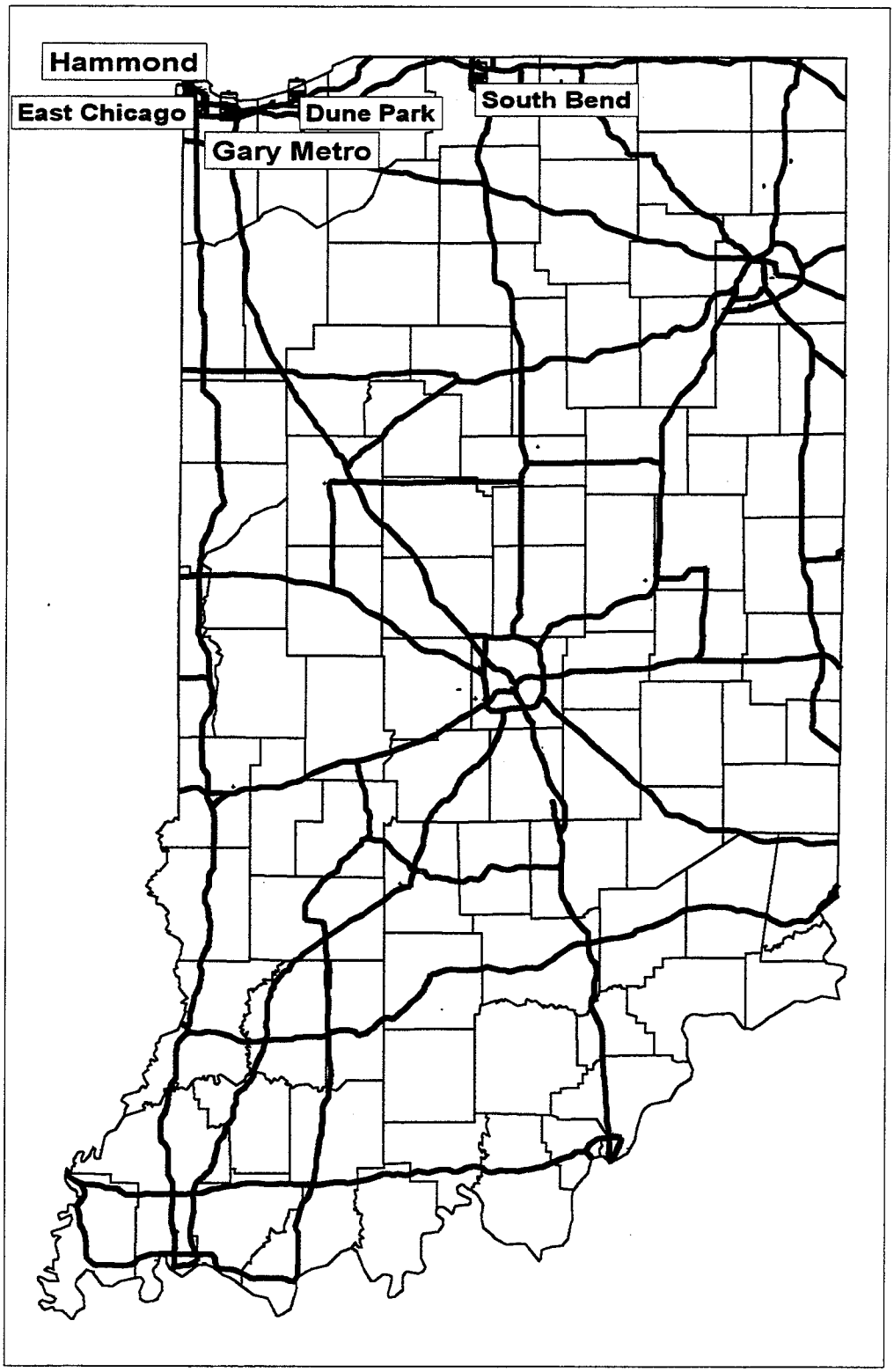
Selection of IMS airport facilities benefited greatly from input from INDOT Aeronautics Section. Twelve passenger airports were eventually selected for the network, most based on the primary criterion of ten percent of statewide demand[2] (38,000 passengers per year). A more detailed basis for selection is presented next:

2 *Statewide demand includes all commercial service enplanements, as well as an estimation of the itinerant share of general aviation riders (assumed to be 2.5 persons per general aviation round trip).*

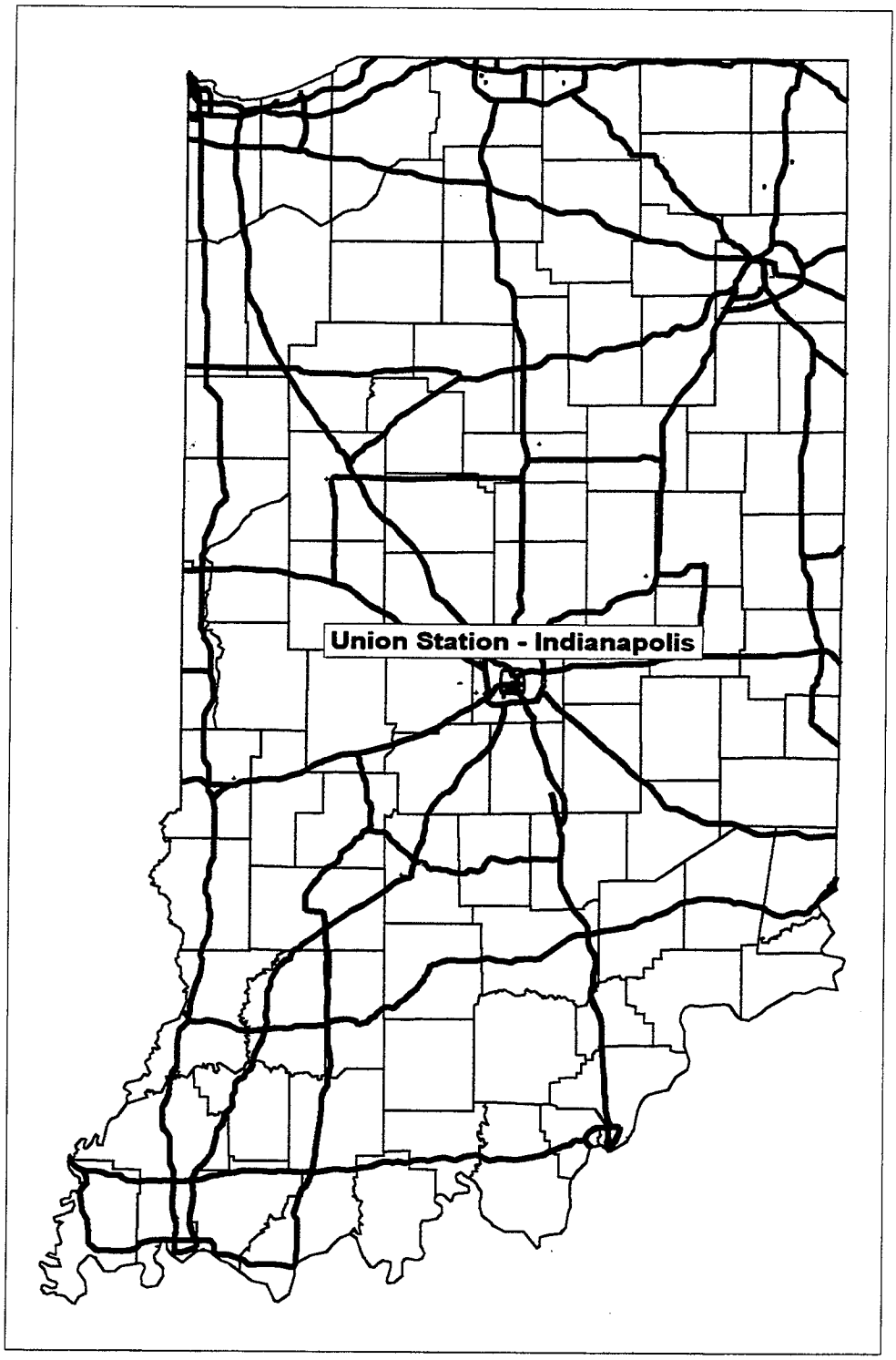
AMTRAK FACILITIES



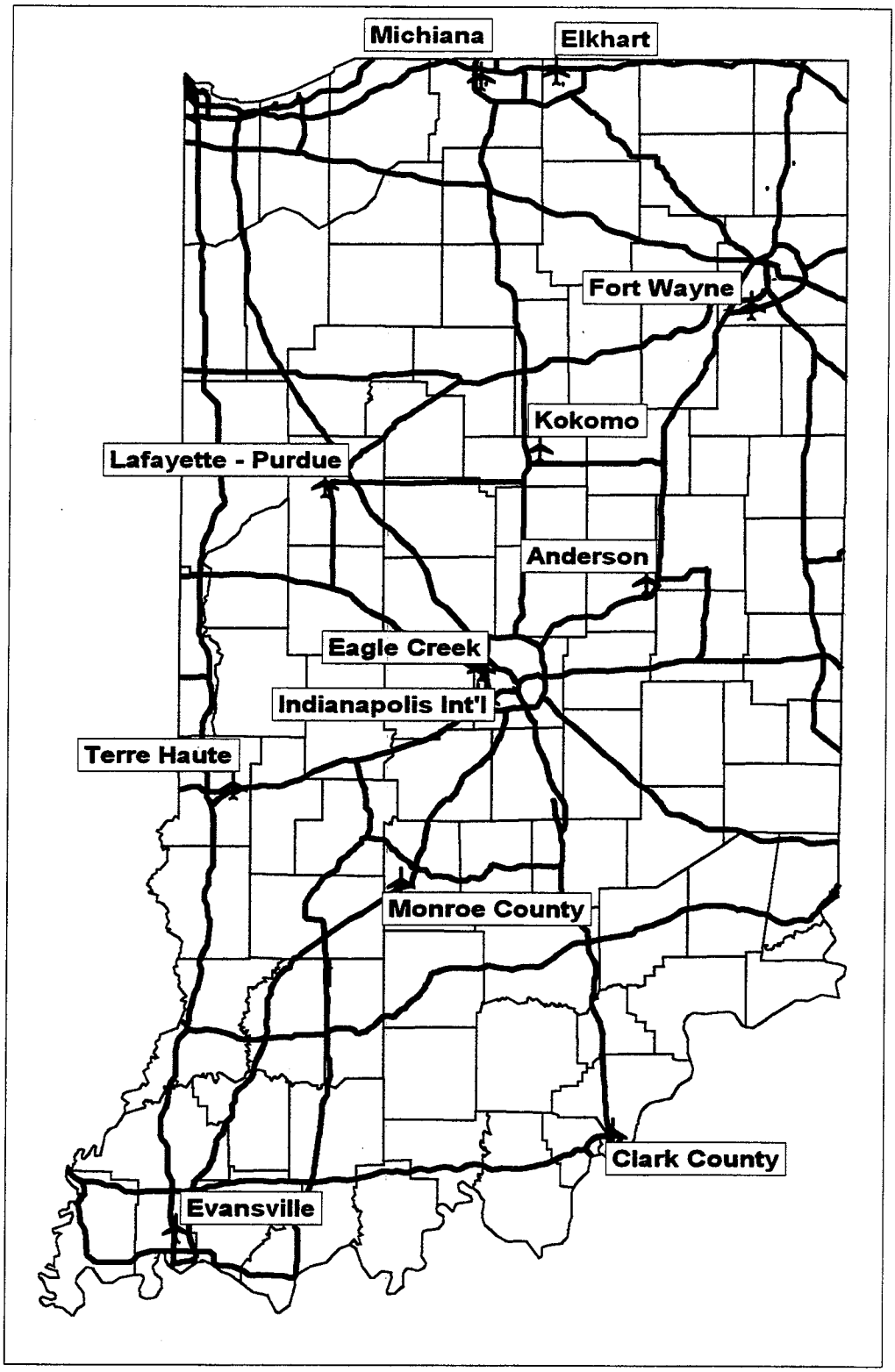
NICTD STATIONS



Intercity Bus Facilities



Major Airports



2.4 Freight Facilities Network

The types of freight facilities selected for the IMS network include rail/truck intermodal (transfer) facilities; river and lake ports; and airports.

2.4.1 Rail/Truck Intermodal

Five intermodal rail/truck facilities were selected for the IMS network during the study. These were:

- The Indianapolis Avon Yard facilities, operated by Conrail
- The Roanoke facility, handling General Motors automobiles and served by Norfolk Southern
- The Fort Wayne Triple Crown facility, operated by Norfolk Southern
- The Evansville CSX facility
- The Hoosier Lift facility in Remington, served by the Atchinson, Topeka and Santa Fe Railroad (ATSF), and by the Toledo, Peoria, and Western Railway (TP&W).

Each of the facilities satisfies the primary criteria for rail/truck intermodal of 12,500 car loads per year.

2.4.2 Ports

Of the eight ports that qualified for inclusion, three are public facilities; the rest are privately owned. All terminals qualified both on the basis of gross weight (over 50,000 Twenty foot Equivalent Units (TEU's)) and from the truck criterion point of view (over 100 trucks per day in each direction).

On the public side, the Indiana Port Commission runs Burns International Harbor, Southwind Maritime Centre, and Clark Maritime Centre.

Private ports in the network include several steel ports: Inland Steel, LTV Steel, and USX Steel. Finally, two stone raw materials ports belonging to Mulzer Stone were added to the list. These facilities are located in Evansville and Newburgh, both on the Ohio River.

2.4.3 Airports

Two Indiana airports qualified for the IMS network on the basis of activity: Indianapolis International and Hulman Regional in Terre

Haute. Each of these two facilities handle in excess of 100,000 short tons per year, arriving or departing by highway access mode.

The following three pages contain maps representing the statewide freight facilities network, again depicted on a background that includes the NHS and County lines. They include:

- Intermodal Freight Facilities
- Port Facilities
- Truck/Rail Intermodal Facilities.

The two freight airports are shown on the general freight facilities map.

The following two sections address the data collection undertaken for access links and facilities. In all cases, care was taken to capture data directly from the source. When local data was not available, the IMS team used INDOT data to complete missing fields where local information was not available.

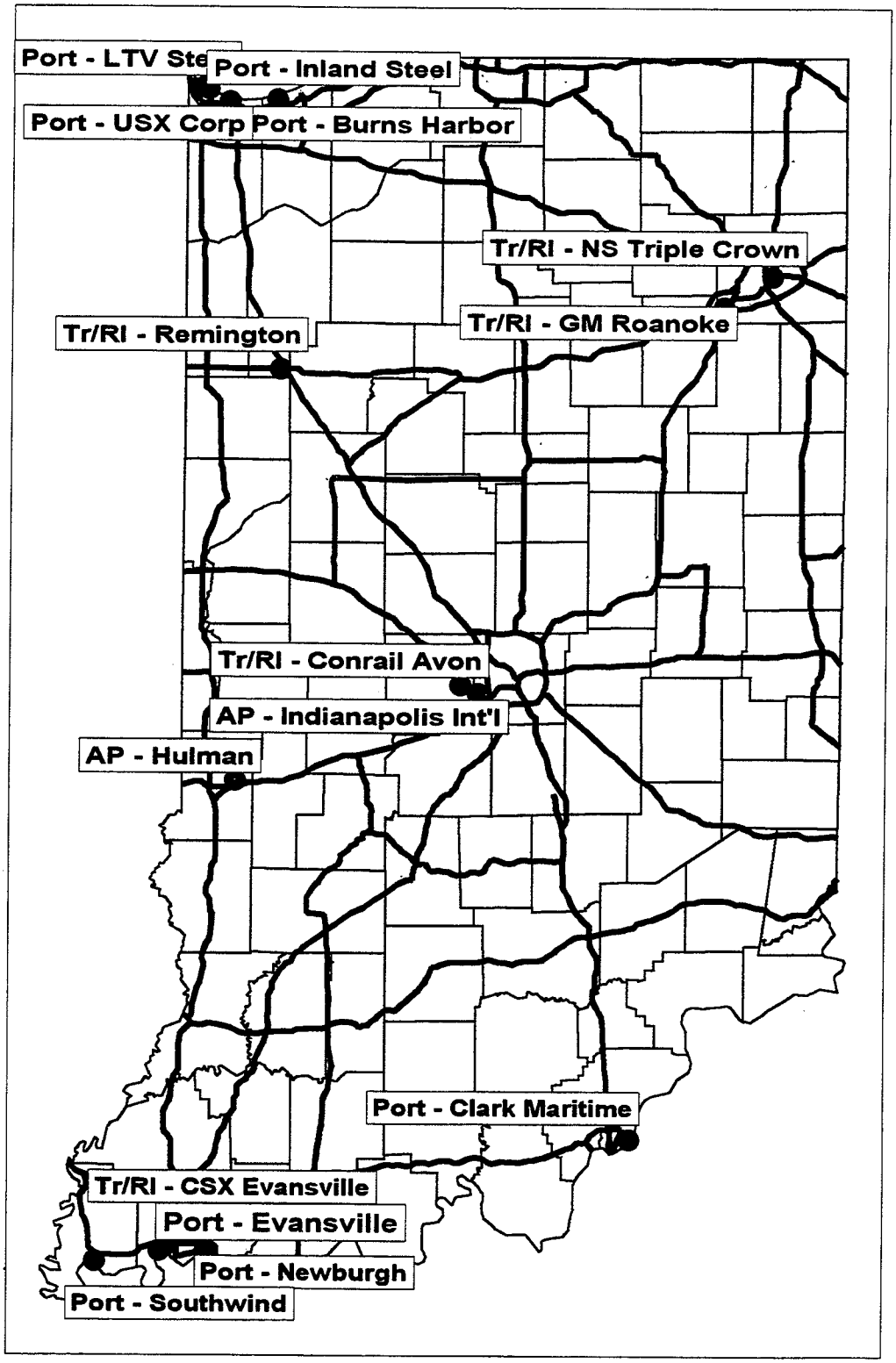
2.5 Access Link Spatial and Attribute Data

2.5.1 Geographic Data

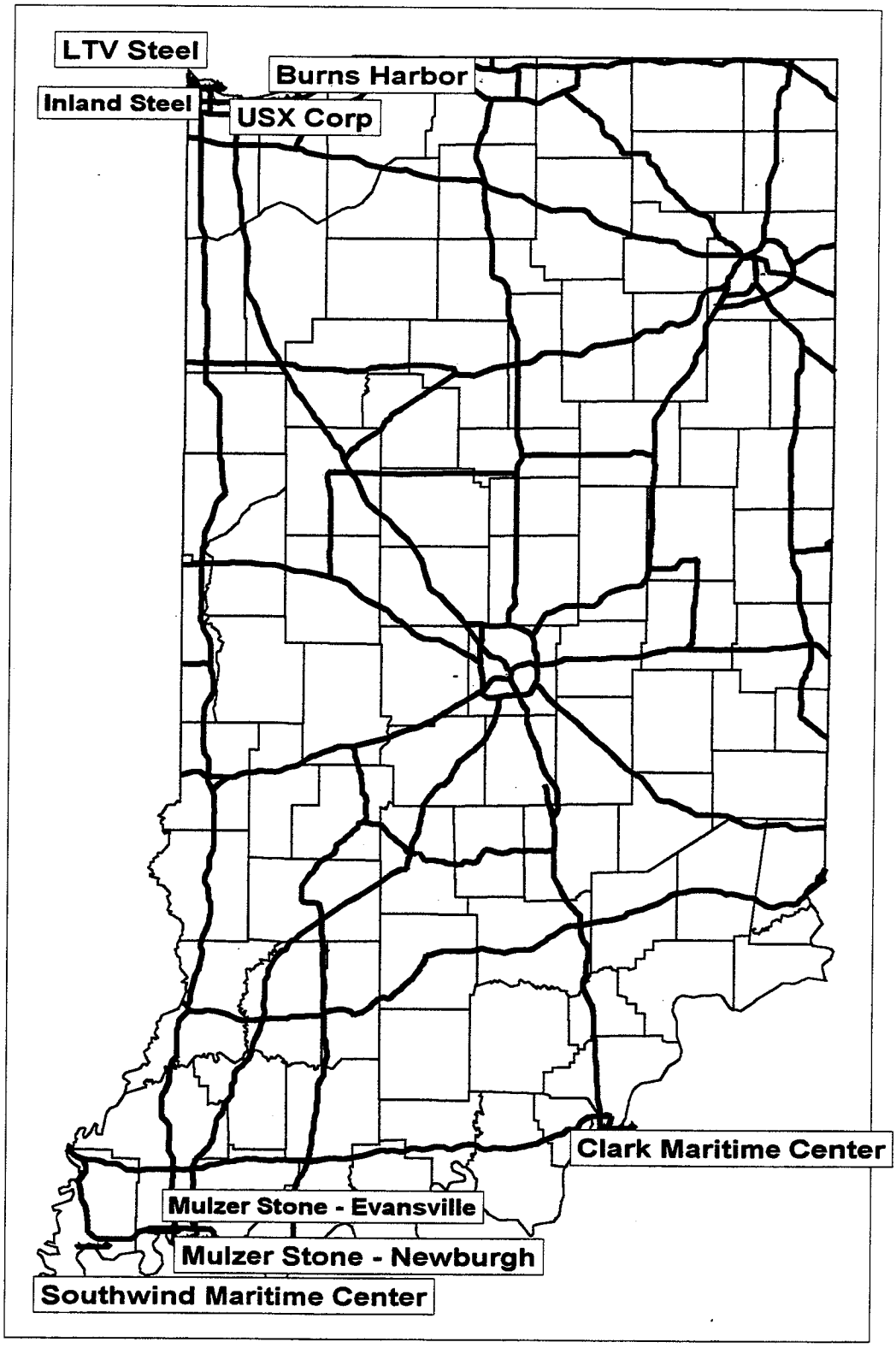
The IMS team collected geographic information related to access links both through the local Metropolitan Planning Organizations, as well as though facility managers/operators directly. Facility maps were obtained for the majority of facilities, then later used to aid in identifying the primary access to the NHS. Maps also helped with the digitization process for the local and State/US link. One key geographic element for access links is distance. This includes both the distance from the facility to the nearest State/US road, and the distance from the last local road to the NHS connection.

The IMS team worked closely with INDOT Planning to ensure that results from the "measurement" task were consistent with previous submittals to FHWA concerning facility links to the NHS.

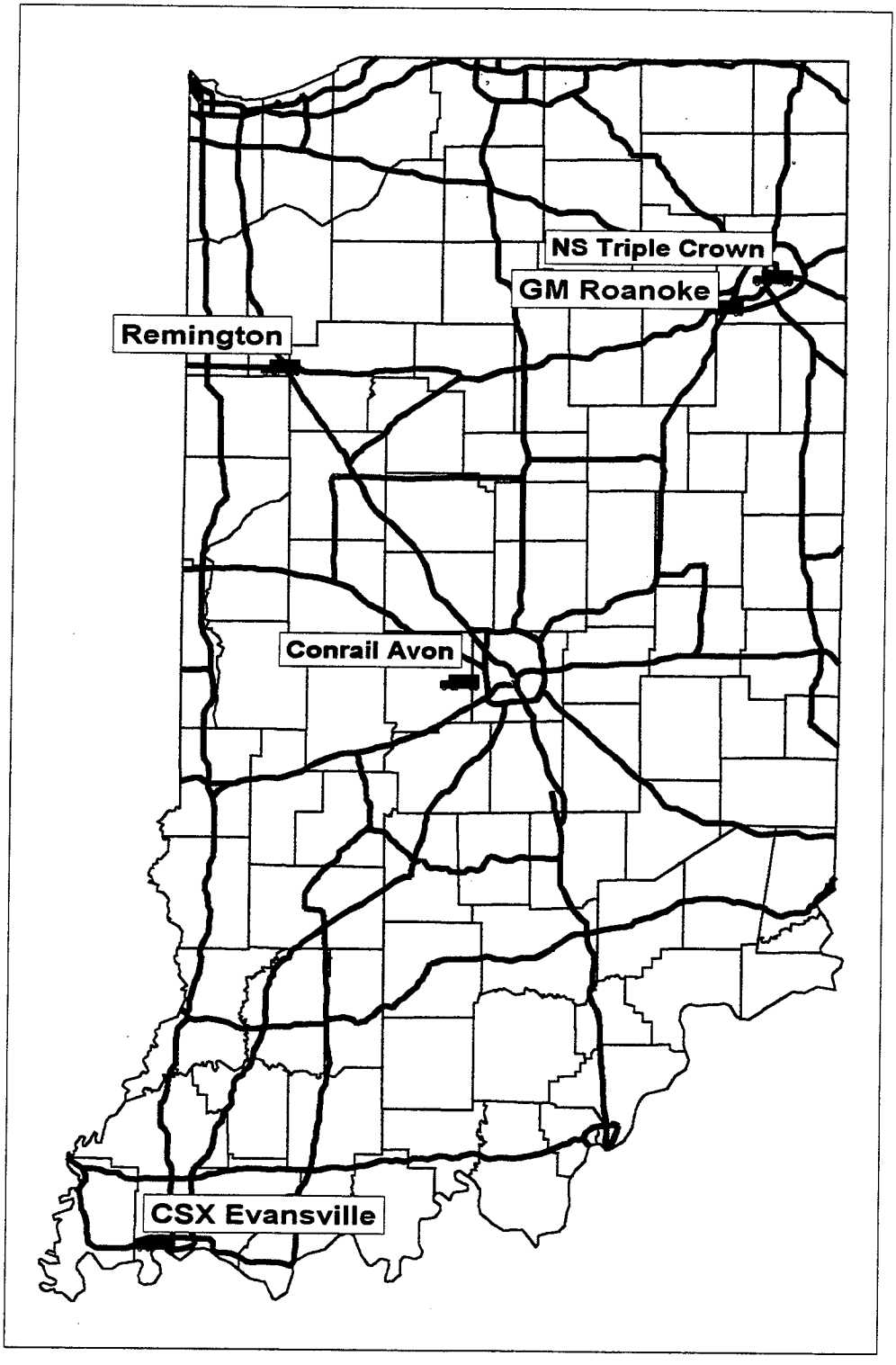
Intermodal Freight Facilities



Port Facilities



Truck / Rail Intermodal Facilities



2.5.2 Demand and Speed Data

Once a spatial network of access links had been determined, person and vehicular demand, speed, and safety attribute data could all be researched. Following extensive discussions with INDOT, the approach selected included utilizing the following sources:

Data	Primary Source	Secondary Source
Average Daily Traffic (ADT)	MPO	INDOT Road Inventory
Truck demand	Facility	None
Peak hour volumes	INDOT Congestion Management System	None
Vehicle occupancy (AVO)	MPO	INDOT Congestion Management System
Free Flow Speed	MPO	INDOT Road Inventory
Congested speed	MPO	INDOT Congestion Management System

Of all the data fields, the IMS team had best success with the daily and peak hour vehicle volumes. Both the INDOT Road Inventory and the Congestion Management System (CMS) served the team well as a back-up source. Congested speed proved the most challenging field to gather, particularly for local roads. In roughly half of the cases, it simply was not available from the MPO and had to be left blank.

2.5.3 Safety Data

The IMS team collected the majority of its accident data from the local MPO. In many cases, the MPO had to contact the Police Department and make a special request. INDOT's Safety Management System (SMS) provided a back-up source of numbers for the State/US links. Again, for a number of local links safety numbers were not available.

2.6 Facility Data

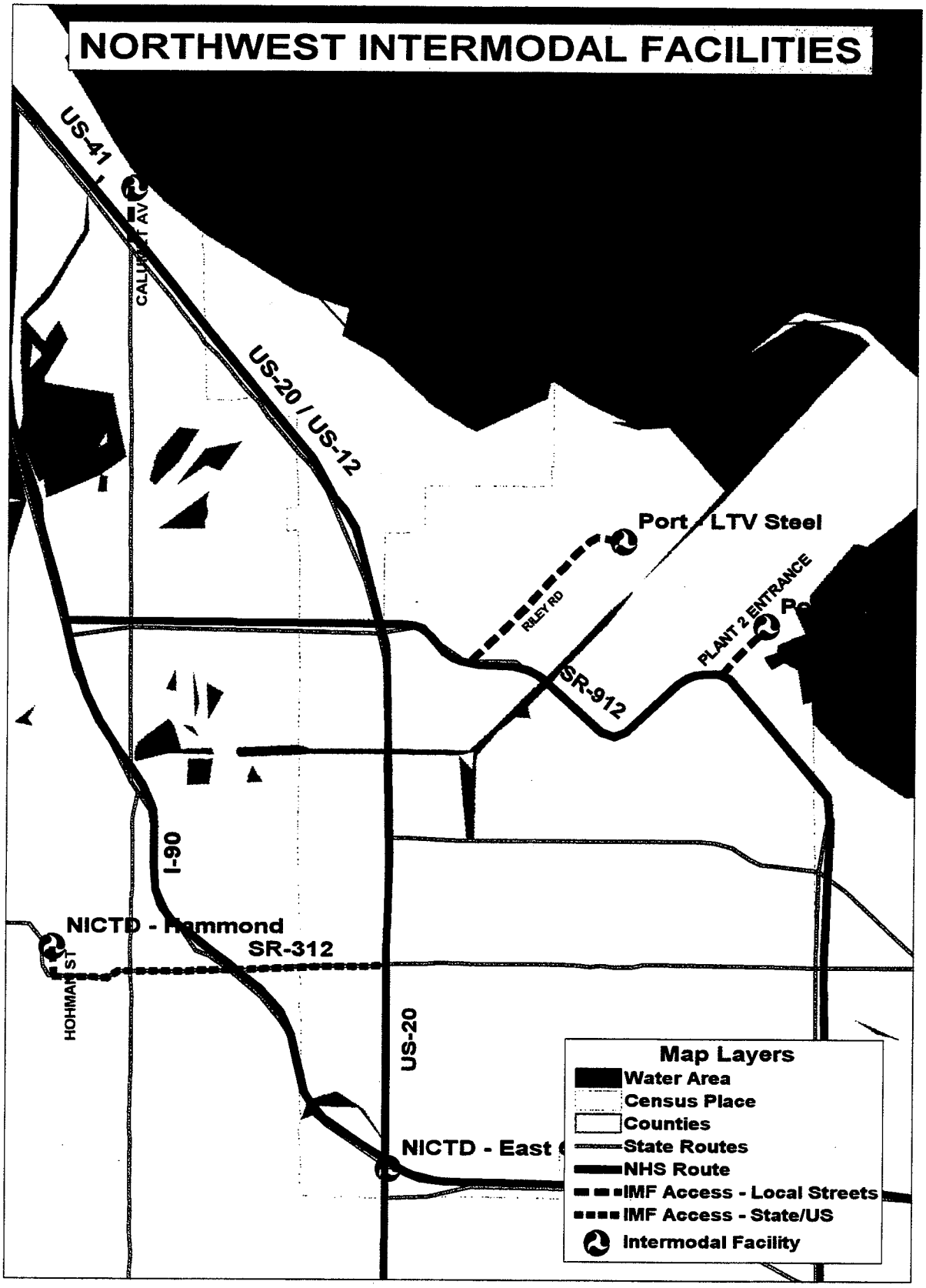
Facility data fields all relate directly to the facility itself, as opposed to immediate access links. Types of data that were collected can be referenced in the data dictionary at the end of this documentation. They include identifier, demand and facility feature support fields.

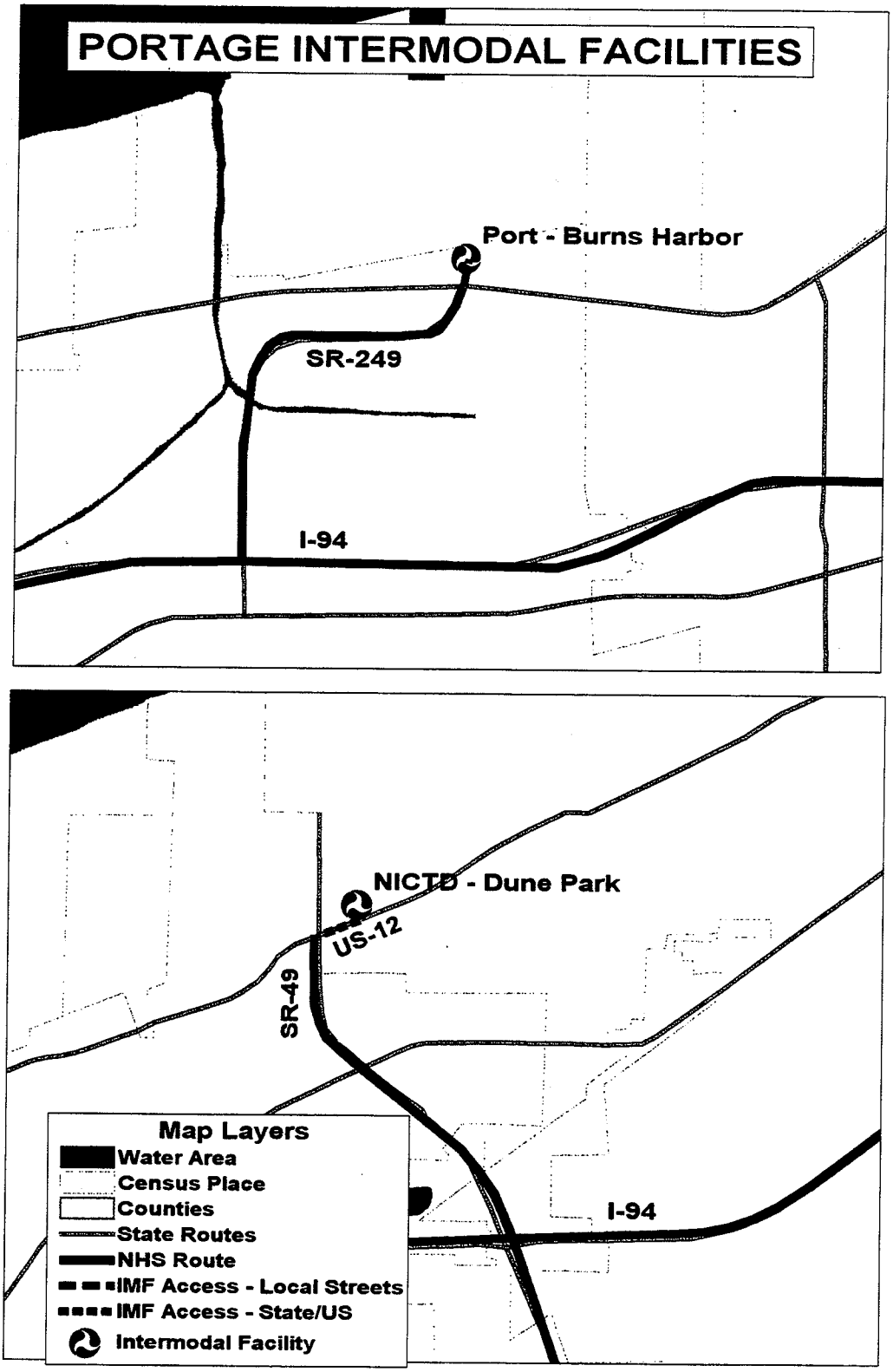
Virtually all IMS facility fields were collected directly from the facility owners or managers. Advisory Committee member representing a given facility tended to expedite the research, though many more sources were contacted. A comprehensive list of the contacts made during the facility data collection process is provided at the back of this documentation in Appendix D.

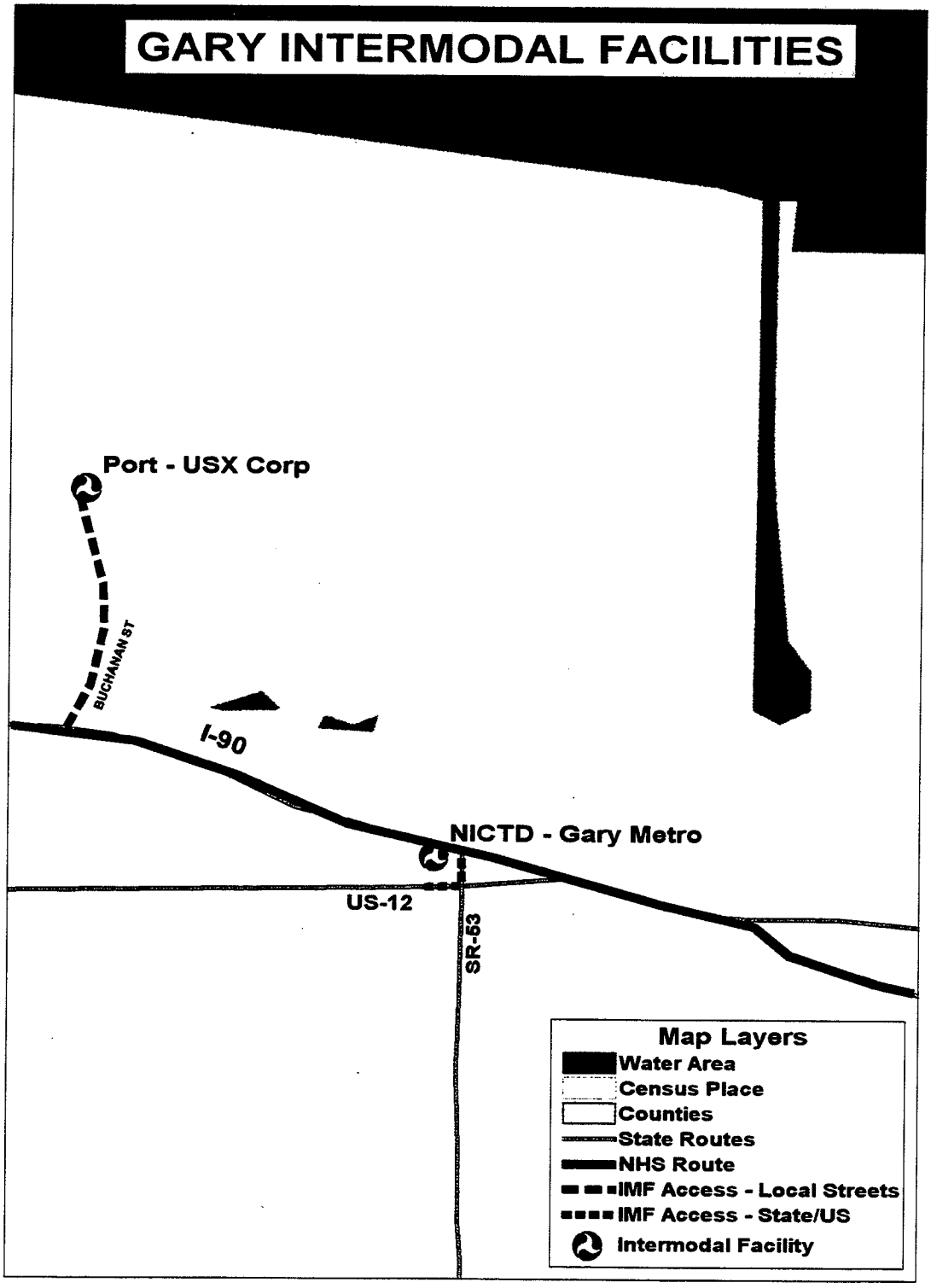
The remainder of this section illustrates, through thirteen color TransCad produced maps, individual facilities by region and how they relate to the road network. The maps include the following regions:

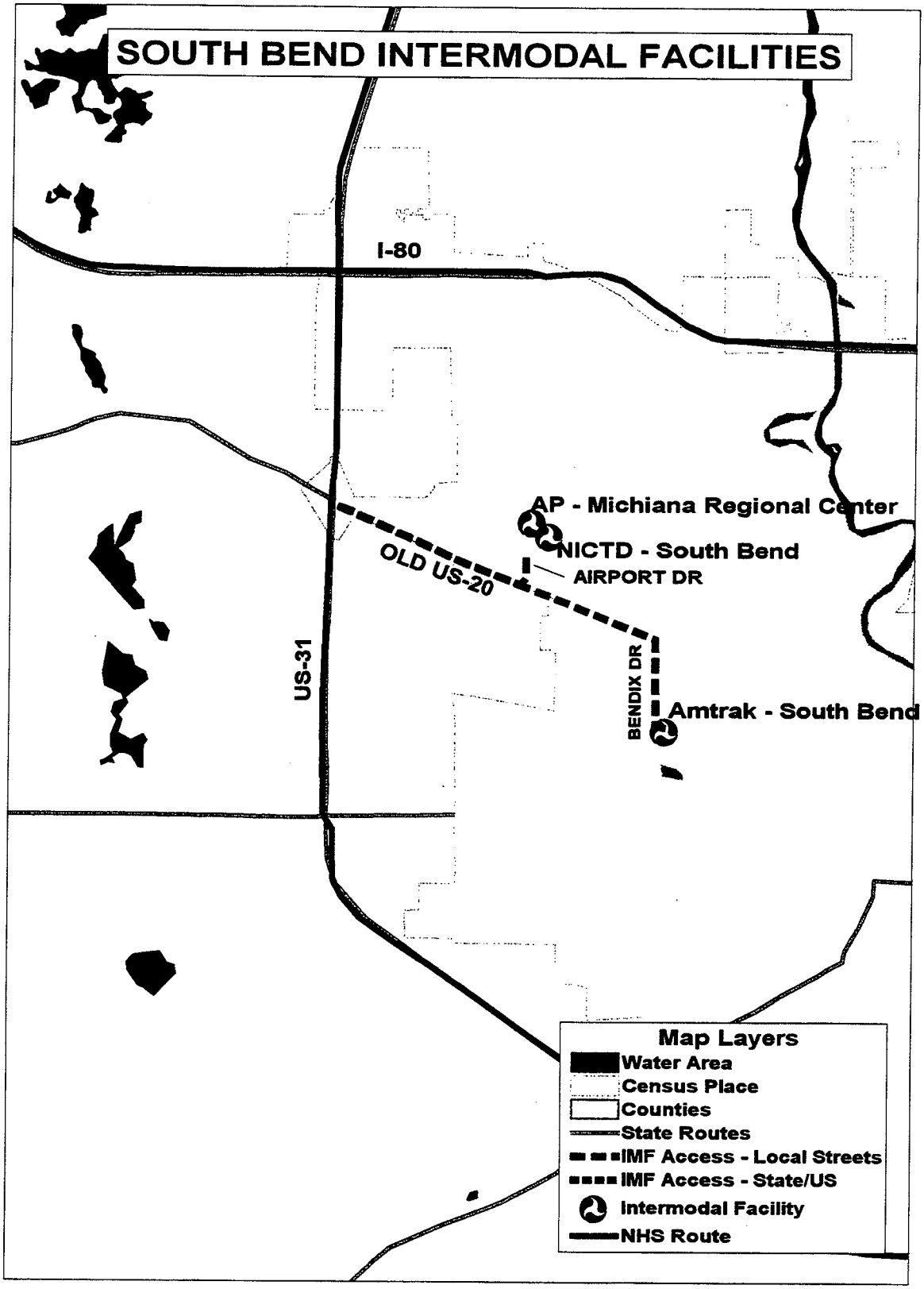
- Northwest
- Portage
- Gary
- South Bend
- Elkhart
- Fort Wayne
- Waterloo/Garrett
- Lafayette and Remington
- Kokomo and Anderson
- Indianapolis
- Bloomington and Terre Haute
- Evansville
- Clark County

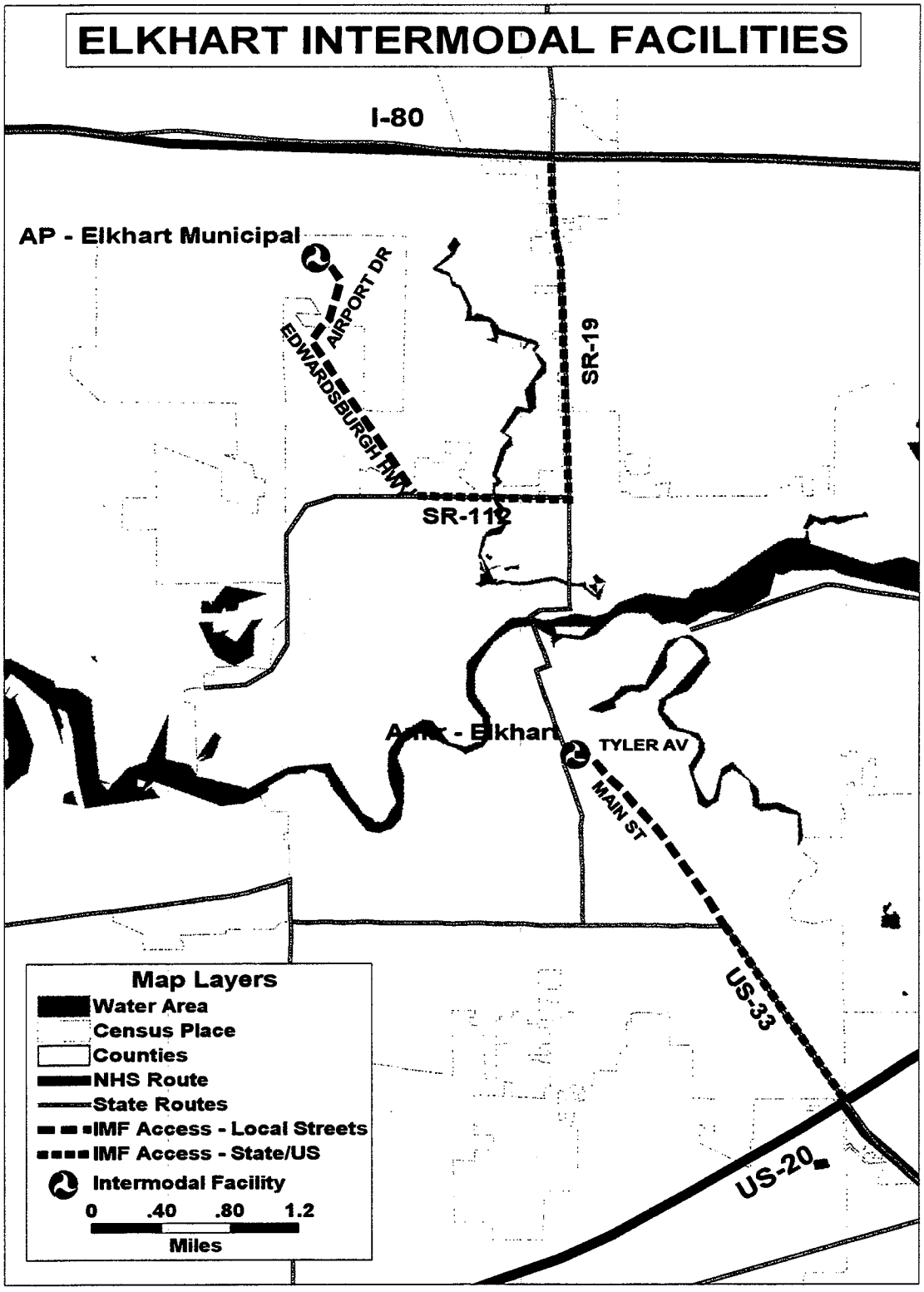
The next section in this documentation, Chapter 3, explores GIS development and the IMS user interface with respect to accessing information related to these facilities, as well as to the road and rail networks.

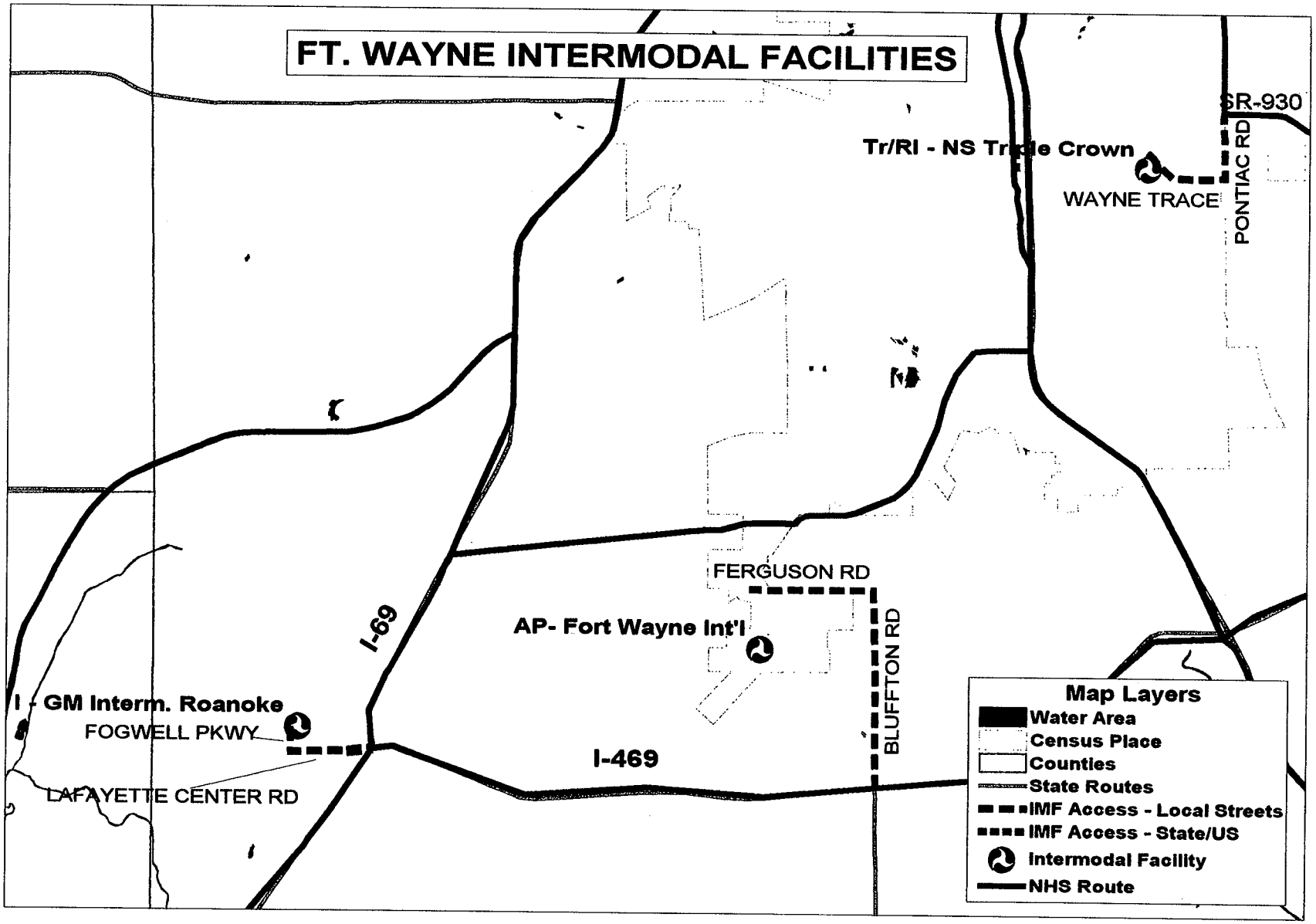

NORTHWEST INTERMODAL FACILITIES
US-41
CALUMET AV
US-20 / US-12
Port - LTV Steel
RILEY RD
PLANT 2 ENTRANCE
SR-912
I-90
NICTD - Hammond
SR-312
HOHMAN ST
US-20
NICTD - East
Map Layers
Water Area
Census Place
Counties
State Routes
NHS Route
IMF Access - Local Streets
IMF Access - State/US
Intermodal Facility

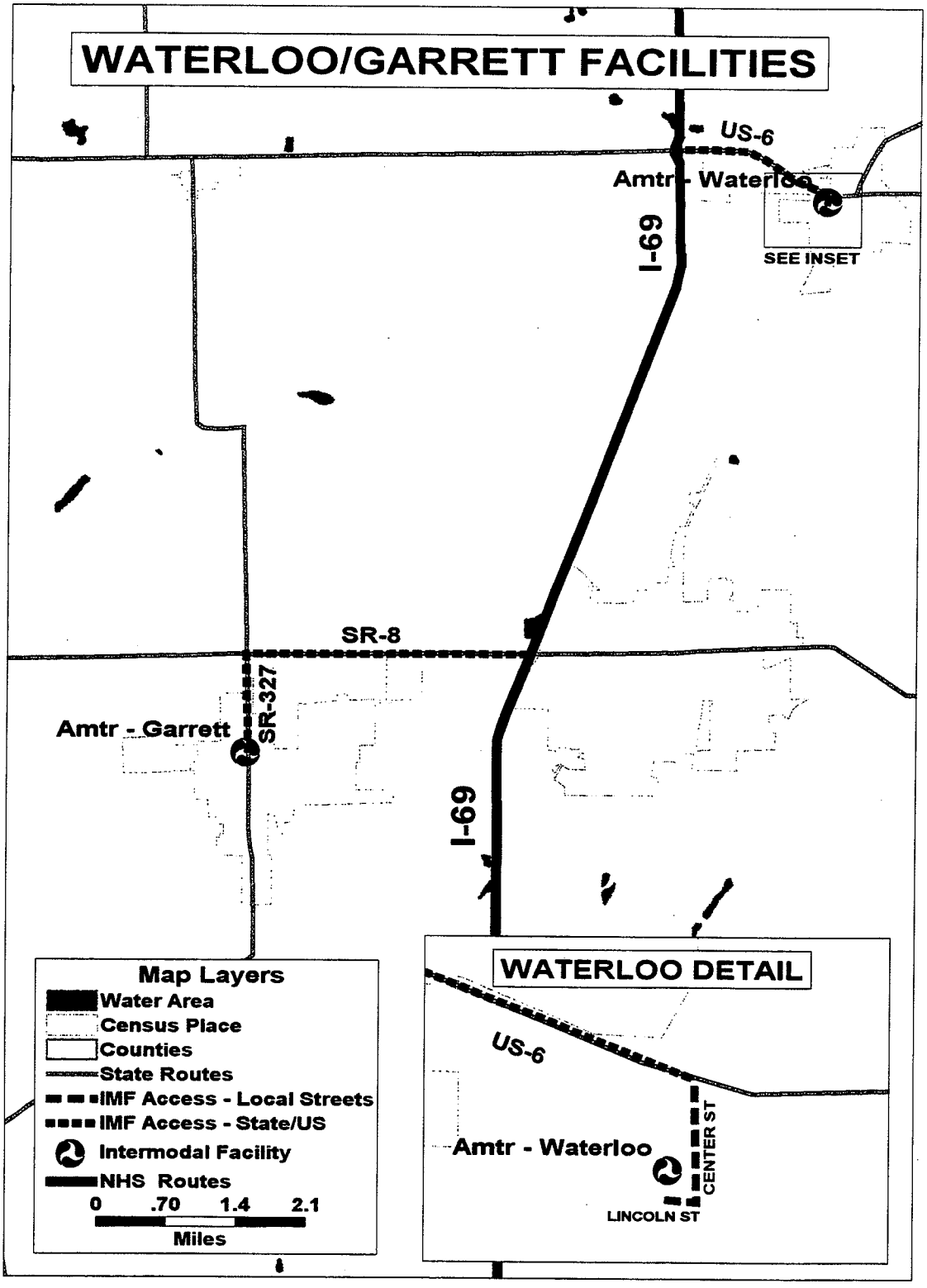

PORTAGE INTERMODAL FACILITIES
Port - Burns Harbor
SR-249
I-94
NICTD - Dune Park
US-12
SR-49
I-94
Map Layers
Water Area
Census Place
Counties
State Routes
NHS Route
IMF Access - Local Streets
IMF Access - State/US
Intermodal Facility

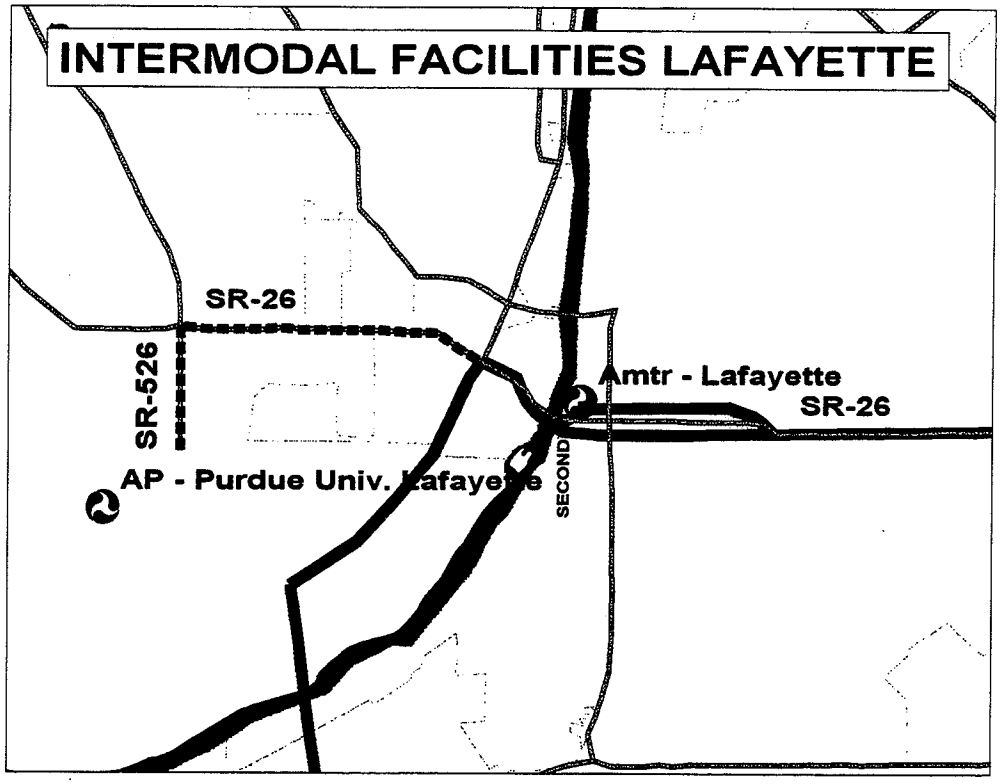

GARY INTERMODAL FACILITIES
Port - USX Corp
BUCHANAN ST
I-90
NICTD - Gary Metro
US-12
SR-53
Map Layers
Water Area
Census Place
Counties
State Routes
NHS Route
IMF Access - Local Streets
IMF Access - State/US
Intermodal Facility

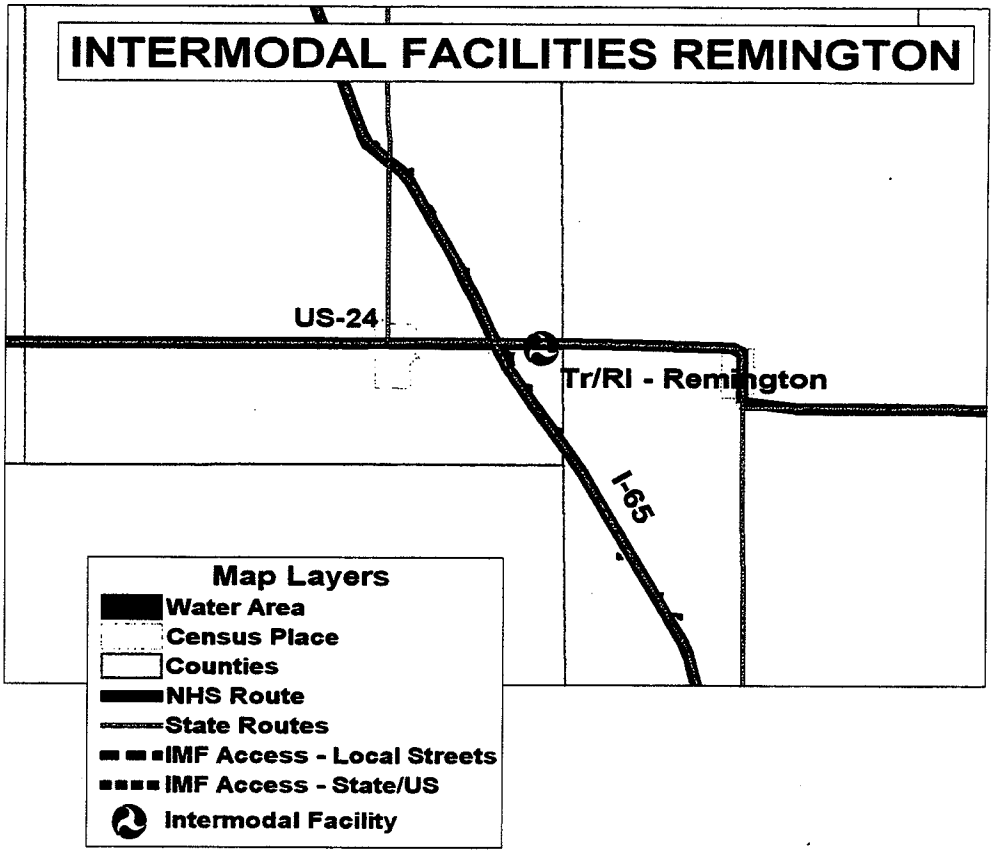

SOUTH BEND INTERMODAL FACILITIES
I-80
AP - Michiana Regional Center
NICTD - South Bend
AIRPORT DR
OLD US-20
US-31
BENDIX DR
Amtrak - South Bend
Map Layers
Water Area
Census Place
Counties
State Routes
IMF Access - Local Streets
IMF Access - State/US
Intermodal Facility
NHS Route

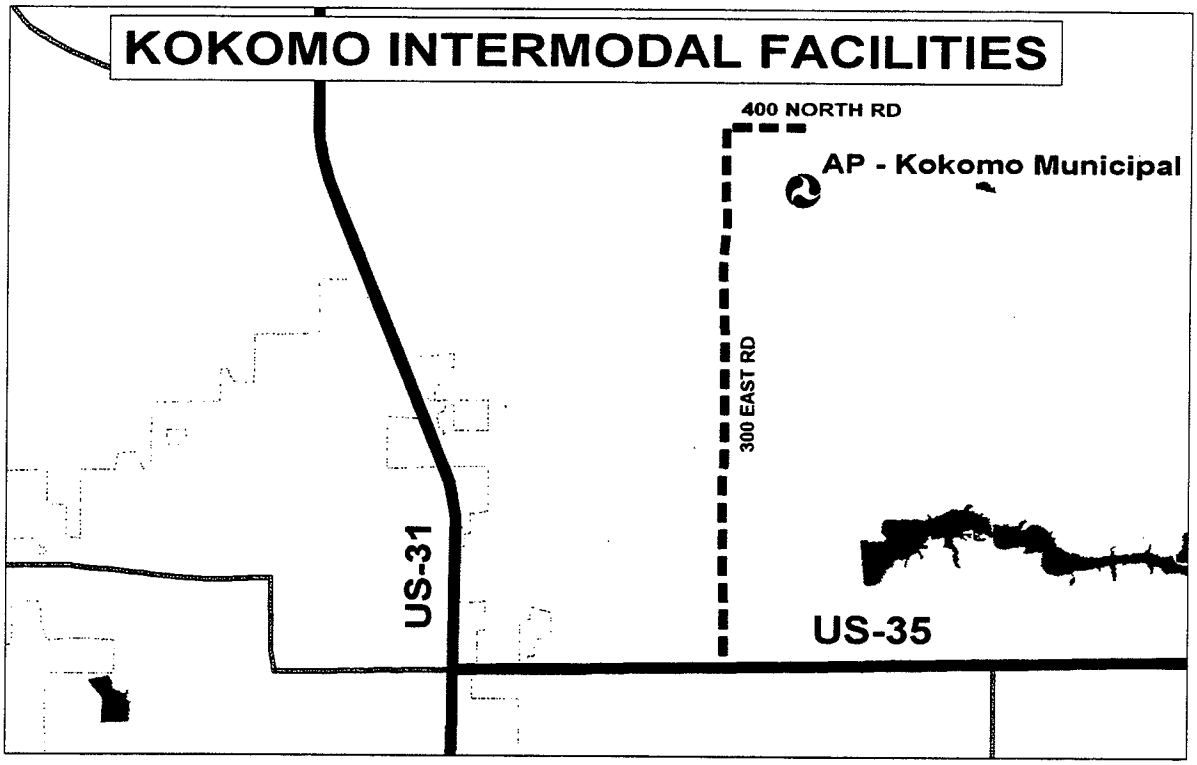

ELKHART INTERMODAL FACILITIES
I-80
AP - Elkhart Municipal
AIRPORT DR
EDWARDSBURGH RW
SR-19
SR-112
TYLER AV
MAIN ST
US-33
US-20
Map Layers
Water Area
Census Place
Counties
NHS Route
State Routes
IMF Access - Local Streets
IMF Access - State/US
Intermodal Facility
0 .40 .80 1.2
Miles

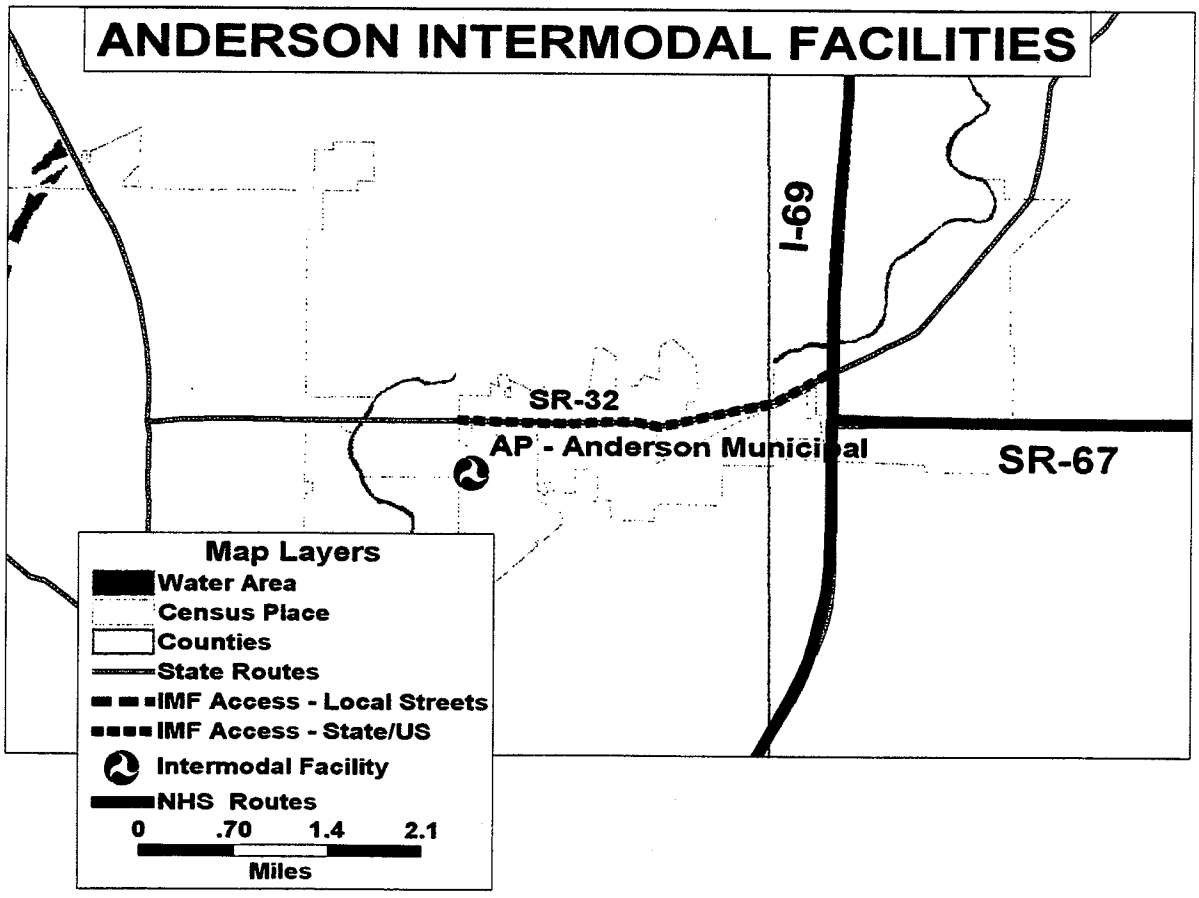

FT. WAYNE INTERMODAL FACILITIES
SR-930
PONTIAC RD
Tr/RI - NS Triple Crown
WAYNE TRACE
FERGUSON RD
AP- Fort Wayne Int'l
I-69
BLUFFTON RD
I - GM Interm. Roanoke
FOGWELL PKWY
LAFAYETTE CENTER RD
I-469
Map Layers
Water Area
Census Place
Counties
State Routes
IMF Access - Local Streets
IMF Access - State/US
Intermodal Facility
NHS Route


WATERLOO/GARRETT FACILITIES
US-6
Amtr - Waterloo
I-69
SEE INSET
SR-8
SR-327
Amtr - Garrett
I-69
Map Layers
Water Area
Census Place
Counties
State Routes
IMF Access - Local Streets
IMF Access - State/US
Intermodal Facility
NHS Routes
0 .70 1.4 2.1
Miles
WATERLOO DETAIL
US-6
Amtr - Waterloo
CENTER ST
LINCOLN ST

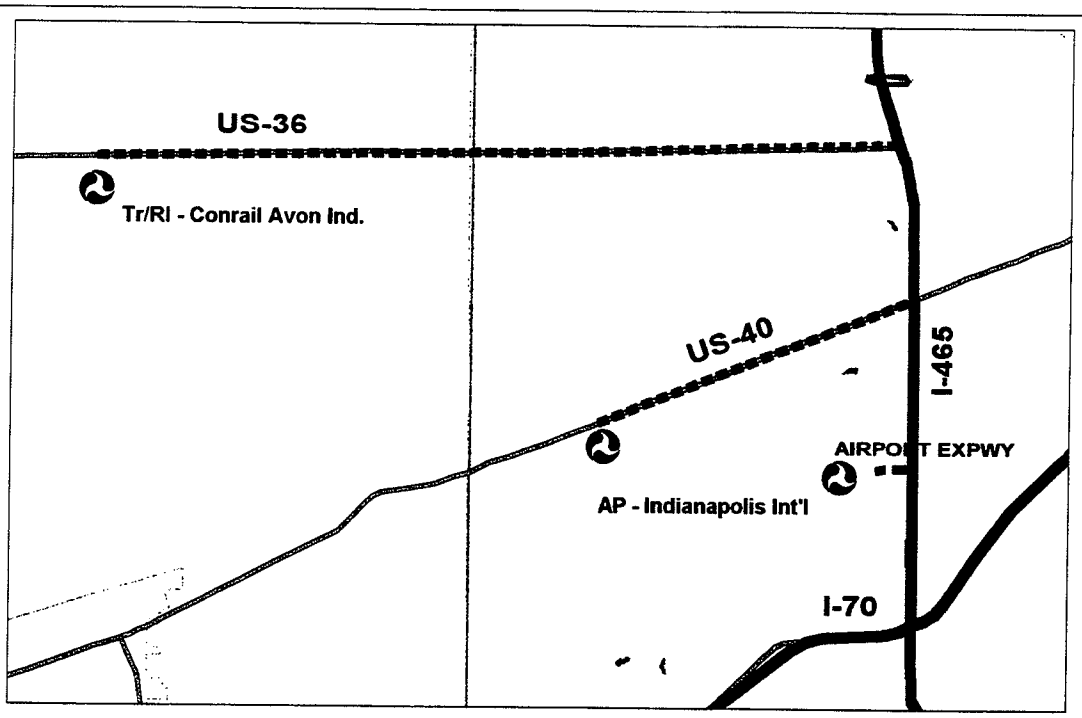

INTERMODAL FACILITIES LAFAYETTE
SR-26
SR-526
Amtr - Lafayette
SR-26
SECOND
AP - Purdue Univ. Lafayette

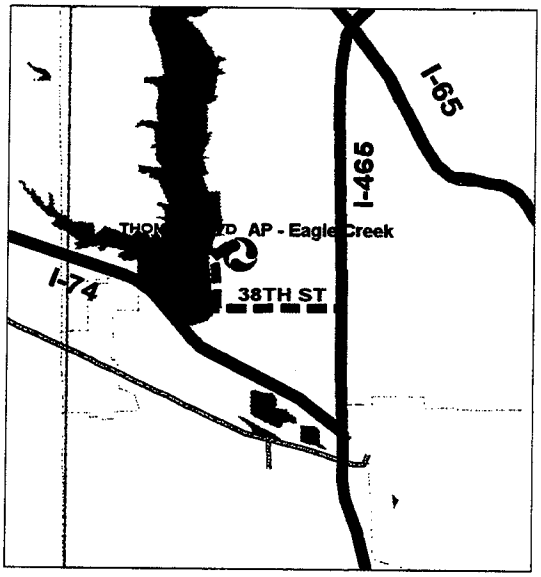

INTERMODAL FACILITIES REMINGTON
US-24
Tr/Rl - Remington
I-65
Map Layers
Water Area
Census Place
Counties
NHS Route
State Routes
IMF Access - Local Streets
IMF Access - State/US
Intermodal Facility

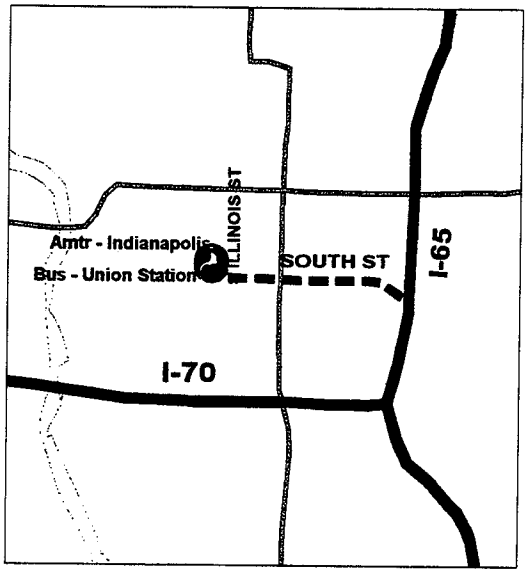

KOKOMO INTERMODAL FACILITIES
400 NORTH RD
AP - Kokomo Municipal
300 EAST RD
US-31
US-35


ANDERSON INTERMODAL FACILITIES
I-69
SR-32
AP - Anderson Municipal
SR-67
Map Layers
Water Area
Census Place
Counties
State Routes
IMF Access - Local Streets
IMF Access - State/US
Intermodal Facility
NHS Routes
0 .70 1.4 2.1
Miles

INDIANAPOLIS INTERMODAL FACILITIES

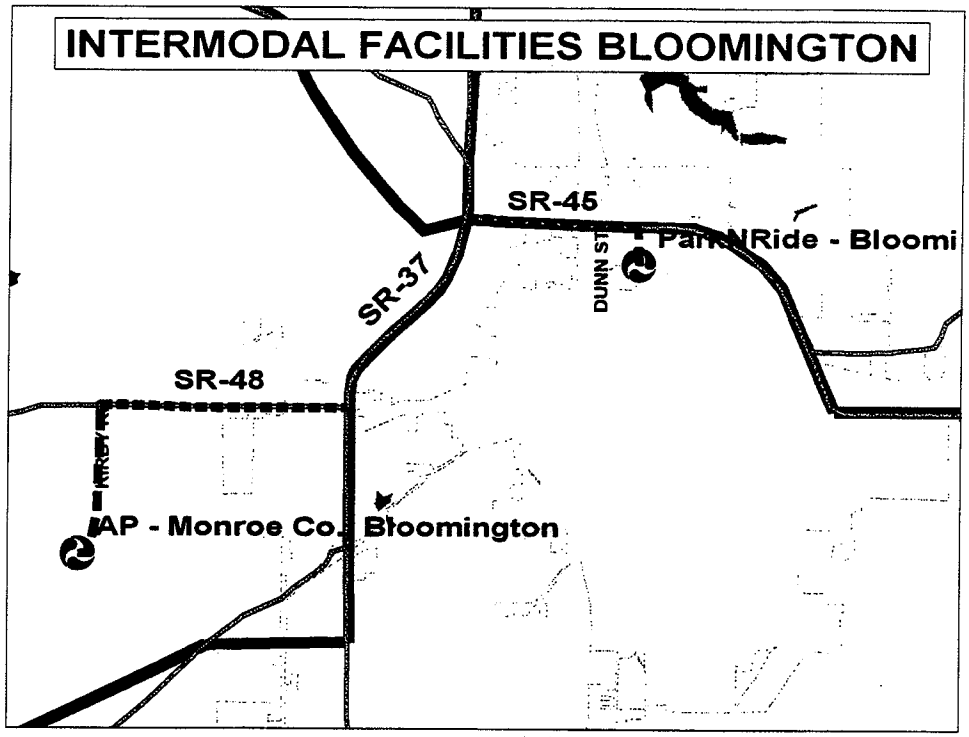


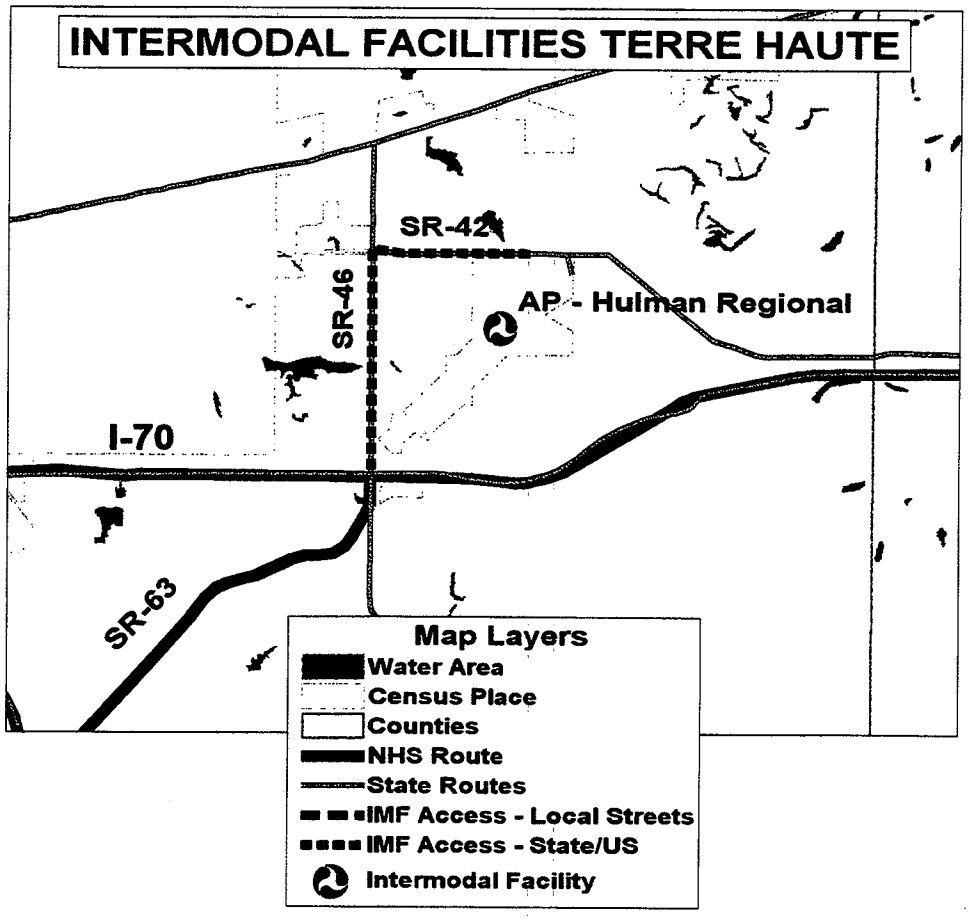




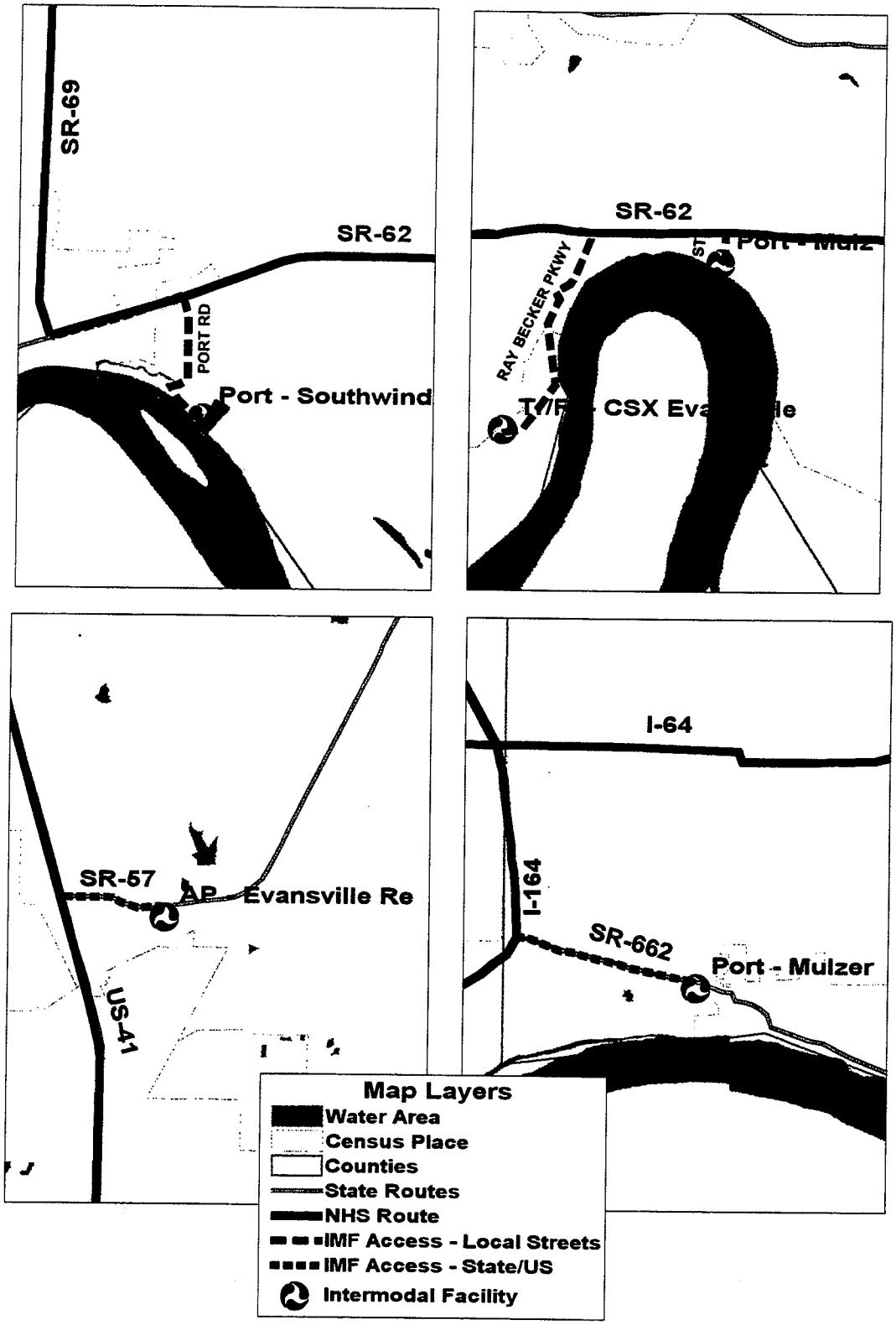
Map Layers

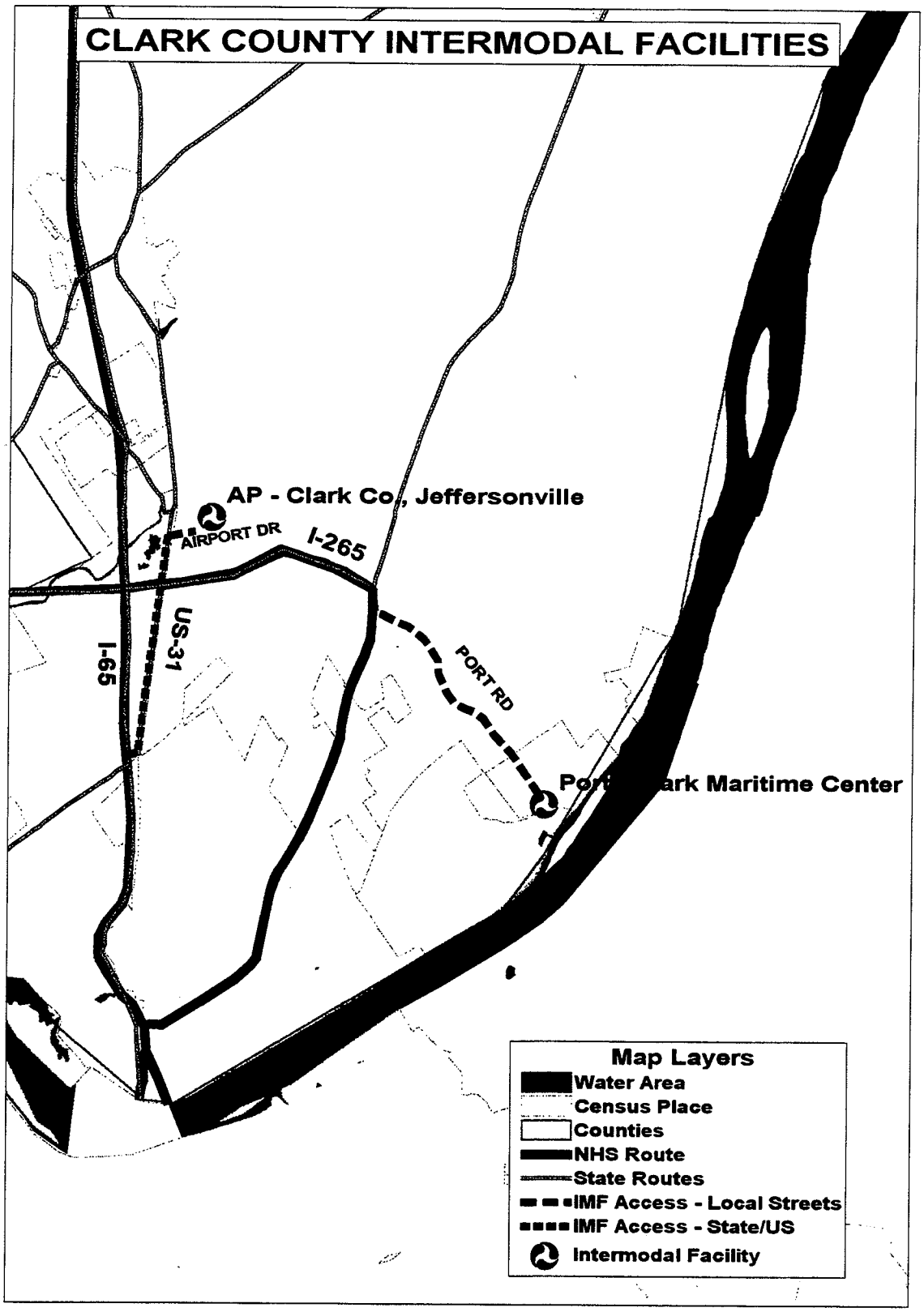
- Water Area
- Census Place
- Counties
- State Routes
- IMF Access - Local Streets
- IMF Access - State/US
- Intermodal Facility
- NHS Routes


INTERMODAL FACILITIES BLOOMINGTON
SR-45
DUNN ST
Park N Ride - Bloomi
SR-37
SR-48
AP - Monroe Co. Bloomington


INTERMODAL FACILITIES TERRE HAUTE
SR-42
SR-46
AP - Hulman Regional
I-70
SR-63
Map Layers
Water Area
Census Place
Counties
NHS Route
State Routes
IMF Access - Local Streets
IMF Access - State/US
Intermodal Facility

EVANSVILLE INTERMODAL FACILITIES




CLARK COUNTY INTERMODAL FACILITIES
AP - Clark Co., Jeffersonville
AIRPORT DR
I-265
US-31
I-65
PORT RD
Port Clark Maritime Center
Map Layers
Water Area
Census Place
Counties
NHS Route
State Routes
IMF Access - Local Streets
IMF Access - State/US
Intermodal Facility